10-11-2019

Physical violence and vulnerable adolescents: the roles of school climate and presence of similar peers

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Physical Violence and Vulnerable Adolescents: The Roles of School Climate and Presence of Similar Peers

Abstract

Using nationally-representative data from the National Longitudinal Study of Adolescent Health (a.k.a., Add Health), this study examines the impact of school climate and share of vulnerable groups of students on self-perceived discrimination and violence involvement in high school. Violence involvement is operationalized as victimization and perpetration of physical violence. Five categories of vulnerability status are analyzed: the emotionally disabled, learning disabled, physically disabled, obese and LGB. Results suggest that relatively higher odds of violence involvement for individuals who were members of vulnerable groups as adolescents are fully explained by school climate and an extensive set of individual-level controls. While the share of vulnerable groups in school is not consistently correlated with violence involvement, school climate is found to be highly predictive of self-perceived discrimination and violence involvement. Consequently, we believe that improving school climate is the most effective strategy for reducing violence involvement of vulnerable youth in school.

Keywords: adolescence; violence involvement; perceived discrimination; vulnerable groups; school climate.

Introduction

Evidence suggests that being a member of a vulnerable group puts one at a higher risk of exposure to violence (Blake et al., 2012; Espelage & Swearer, 2003). However, little attention has been paid to factors contributing to violence involvement among vulnerable children and adolescents (Blake et al., 2012; Earnshaw et al., 2016; Farmer et al., 2012; Rose & Espelage, 2012). The objectives of the present study are, using a large nationally representative sample of American youth, to investigate the link between vulnerability status, on the one hand, and discrimination and violence in school, on the other, and to examine school characteristics that predict risk of perceived discrimination and violence involvement. The present study focuses on three vulnerable (or marginalized) groups: students with disability (emotional, learning or physical disability), obese and LGB.

Minority Stress as a Form of Strain

Minority Stress Theory (MST) is a useful starting point to study the relationship between vulnerable status and school violence. MST argues that members of vulnerable groups experience excess stress (a.k.a. minority stress) because of their stigmatized social status (Meyer, 1995, 2003). According to Meyer (2003), minority stress is being composed of both internalized and external stress processes. Perception of discrimination or internalized stigma are viewed, for example, as proximal stressors, whereas distal stressors include discriminatory events and psychological traumas associated with possessing a minority identity. While much of the literature has focused on discriminatory events as major stressors, little attention has been paid to proximal stressors, such as perceived discrimination (Mays & Cochran, 2001; McAleavey et al., 2011). A strength of the present

study is that it examines not only distal stressors, such as acts of physical violence, but also the proximal one (perceived discrimination). Moreover, the present study examines perpetration of violence by vulnerable groups as a response to minority stress.

One way to explain minority stress is through the lens of strain theory. In his original formulation of the strain theory, Merton (1938) argued that structural strain is the result of the restricted access to the legitimate means designed to achieve culturally acceptable goals. He also postulated that lower-status individuals are more predisposed to deviance as a form of adaptation to their subordinate status. Aggressive behavior has been posited to fit into the general social strain framework (Agnew, 2001, 2006). Research shows that strain produces anger and frustration and aggression is a coping mechanism that strained individuals may use in response to those negative emotions (Brezina et al., 2001; Patchin & Hinduja, 2011). Moreover, marginalization and discrimination have been interpreted as sources of social strain in past research (Agnew, 2006). According to social strain theory (Agnew, 2001), the varied experiences of domination, segregation, and/or discrimination are most likely to lead to deviance. Discrimination has indeed been linked to several negative outcomes, including violent delinquency (Caldwell et al., 2004; Moon, et al., 2009; Pérez et al., 2008). Marginalized and discriminated individuals may be particularly susceptible to strain given their lack of established coping skills (Agnew, 2001, 2006). Hence, violence involvement can be seen as a coping mechanism and a response to the minority stress that members of vulnerable groups face.

School Environment and Violence

Drawing from Folkman & Lazarus's (1988) theoretical framework on social stress, Meyer (1995, 2003) put forward the notion that social environment can either ameliorate or

exacerbate the negative effects of minority stress. For example, supportive normative environment in schools is deemed to be essential in combating anti-social behavior among adolescents (Bender & Lösel, 2011; Bradshaw et al., 2009; Crosnoe et al., 2002;). On the other hand, a hostile and violent social environment can be a contributing factor to negative life events and a source of minority stress (Birkett et al., 2009; Olweus, 2011). Several studies have found an association between school climate and adolescent aggression (Espelage et al., 2014; Meehan et al., 2003; Wilson, 2004). Moreover, students who are part of vulnerable or marginalized groups are more likely to report a hostile school climate (Birkett et al., 2009; Goodenow et al., 2006; Kosciw et al., 2009).

In addition to school climate, characteristics of the student body such as the share of vulnerable categories of students have been demonstrated to constitute a relevant social context for violence involvement (Cook et al., 2010; Gower et al., 2015). This is because the acquaintances and communications between vulnerable students foster social capital and enable social support exchanges among them (Gower et al., 2015; Shavitt et al., 2016). However, social capital may be used to promote either positive or negative outcomes (Crosnoe et al., 2002; Nguyen et al., 2017; Ouellet et al., 2016). Although adolescent peer groups may provide members with the opportunity to form positive skills and relationships, they may also transmit less desirable behaviors such as aggression and violence (Dufur et al., 2015; Wentzel et al., 2004). In support of this line of thinking, some evidence suggests that the share of students with disabilities in a school body is positively associated with the prevalence of violence (Eisenberg et al., 2015).

Hypotheses

Hypothesis 1: Drawing from MST (Meyer, 1995, 2003) and strain theory (Agnew, 2001, 2006; Merton, 1938), we believe that, compared to their non-vulnerable counterparts, members of vulnerable groups experience more social strain in the form of stigma, prejudice, and discrimination. Therefore, we expect that: (1) vulnerable youth will be more likely than other their non-vulnerable peers to report being discriminated against; (2) the odds of violence involvement as victims and perpetrators will be higher for members of vulnerable groups than for other adolescents.

Hypothesis 2: We predict that adolescents who attend schools with better climates are less likely to report being discriminated against and to experience violence involvement than their counterparts who attend schools with poorer climate. In other words, we hypothesize a negative association between school climate, on the one hand, and self-reported discrimination, violence perpetration and victimization, on the other.

Hypothesis 3. We expect that the presence of similarly vulnerable peers in a school can create positive interactions among vulnerable students. Particularly, we expect to find a negative association between the percentage of similarly vulnerable peers in school, on the one hand, and self-perceived discrimination and violence involvement of vulnerable students, on the other. Put differently, the higher the share of adolescent members of a vulnerable group in school, the less the likelihood to report discrimination and the lower chances of violence involvement for members of this group.

Method

Sample

To test the hypotheses outlined above, we relied on the sample derived from Waves I-III of the National Longitudinal Study of Adolescent Health (Add Health), a school-

based panel survey of adolescents in the United States. Details regarding the methodology of the survey are available elsewhere (see, for example, Harris, 2011). Our sample was limited to all individuals who were assigned valid sampling weights and had no missing data on the dependent variables. These restrictions resulted in a selection of 12,929 respondents. Missing data were imputed for the independent variables on a small percentage of observations.

Dependent Variables

A description of all study variables is provided in Table 1. All dependent variables in our study were measured from items collected during Wave III. Discrimination was adopted from Everett & Mollborn (2013). This variable shows whether respondents reported being treated with less respect never or rarely (reference) versus sometimes or often. As shown in Table 2, more than 24% of respondents reported being discriminated against in school.

[Insert Table 1 about here]

The other two outcome variables are represented by two scales gauging whether the respondent had been a victim or a perpetrator of violence. These scales have been described in greater detail elsewhere (e.g., McNulty & Bellair, 2003; Popovici et al., 2012; Schreck et al., 2004). The detailed description of these scales is provided in Table 1. Approximately 10 and 12% of adolescents in our sample were identified as perpetrators and victims of violence, respectively (see Table 2).

[Insert Table 2 about here]

Independent Variables

Following Haffey & Johnston (1990), emotional disability is defined as the extent to which meeting daily living and role responsibilities is hampered by emotional problems. We operationalized emotional disability using a 17-item emotional distress scale at Wave I which measured feelings of depression, loneliness, sadness, fear, and moodiness in the past year (for details about the scale see Resnick et al., 1997). Drawing from Blum et al. (2001), we refer to those students who scored in the upper quintile of the emotional distress scale at Wave I as the emotionally disabled. The emotional distress scale is strongly and positively skewed. Therefore, a number of studies pointed out that high levels of emotional distress are an appropriate marker of disability (e.g., Kodjo & Auinger, 2004; Mark & Buck, 2006).

Our definition of having a learning disability also follows that of Blum et al. (2001). Students who received special education and had difficulty with schoolwork daily or near daily at Wave I were referred to as those who have learning disabilities. Our measure of physical disability was adapted from McRee et al. (2010). Body mass index (BMI) was calculated as an indicator of adolescent weight status using self-reported height and weight measures. Obesity was defined as a BMI at or above the 95th percentile for children of the same age and sex. CDC growth charts were used to define sex-specific cut-points for BMI (Kuczmarski et al., 2002).

Unfortunately, the Add Health does not ask adolescent participants about their sexual identity. However, this survey has a number of measures that various scholars (e.g., Russell & Joyner, 2001; Pearson et al., 2007; Zipp, 2011) have relied on to assess respondents' sexuality. In this paper, we adopted the approach of Russell & Joyner (2001) whose definition of nonheterosexuality is derived from respondents' reports of same-sex

romantic attractions and same-sex romantic relationships at Wave I of the Add Health. The index of school climate is adapted from Bollen & Hoyle (1990). It is constructed as an aggregate of six questions that tap different aspects of school climate. The detailed description of the index is given in Table 1.

Parents' income and education were included in an attempt to control for family SES, a factor often linked to adolescent academic achievement (Crosnoe et al., 2002; Ryabov, 2015). Those cases with negative income were recoded as zeros because reports of negative household income, as opposed to individual income, may indicate debt and, thus, differ in nature from the income measure. Controls also included family structure (two-parent household vs. other family arrangement), race-ethnicity (African-American, Asian, Latino, non-Hispanic white, and other race-ethnicity), age and sex, (female is the reference category).

Analytic Strategy

Given the hierarchical structure of the Add Health dataset, we chose multilevel logistic regression with random effects (2-level random intercepts model) as an appropriate analytic strategy to predict the aforementioned outcomes. We used a 2-level modeling approach: individuals (level-one units) are nested within schools (level-two units).

Multivariate results are presented in Tables 3-7. Each table focuses on one vulnerable group and presents parallel analyses comprised of three models for each outcome in Panels A, B and C. The first model tests *Hypothesis 1* and examines only the effect of an individual's vulnerability status. It shows how likely a member of a specific group of vulnerable students (the emotionally disabled in Table 3, the learning disabled in Table 4, the physically disabled in Table 5, the obese in Table 6 and LGB in Table 7) is to

be discriminated against (Panel A), to be a victim of violence (Panel B), and to be a perpetrator of violence (Panel C) in the absence of any other independent variables. The second model tests *Hypotheses 2* and *3*. It adds school-level variables—school climate and the percentage of vulnerable adolescents. The third and final model incorporates all of the control variables—parental educational attainment, parental income, being raised in a two-parent household, race-ethnicity dummies, age and sex (male). The coefficients for control variables are not shown for the sake of parsimony.

Results

Below we discuss the analyses presented in Tables 3-7 simultaneously on account of the similarity of their results. Altogether, comparing results presented in Tables 3-7 reveals that: (1) in the absence of any controls, vulnerable status (having a disability, being obese or LGB) predisposes to increased chances of reporting being discriminated and engaging in violence; (2) school climate and the percentage of similarly vulnerable peers in school explain the higher odds of violence involvement of vulnerable groups of students in all cases, except for LGB victimization; (3) higher odds of LGB victimization are fully explained by individual-level controls (race, gender, age, SES, etc.). Overall, only limited support was found for our main hypothesis (*Hypothesis 1*), namely that the disabled, obese and LGB are at higher risk of violence involvement, either as victims or perpetrators. However, students with learning disabilities, the obese and LGB are still likely to report more discrimination that their non-vulnerable peers.

[Insert Table 4 about here]

[Insert Table 5 about here]

[Insert Table 6 about here]

[Insert Table 7 about here]

[Insert Table 8 about here]

Most importantly, *Hypothesis 2* concerning the influence of school climate on self-reported discrimination and violence involvement found strong support in the Add Health data. We found a strong and negative association between school climate and violence perpetration and victimization. At the same time, the evidence supporting *Hypotheses 3* was neither strong nor conclusive. Percentages of the emotionally disabled, obese, and LGB students in school were only marginally significant ($P<0.1$) when predicting the odds of violence involvement. The share of learning disabled was also predictive ($P<0.1$) of violence perpetration, but not violence victimization. In all these cases, the shares of disabled, obese and LGB students were positively associated with the probabilities of reporting discrimination and violence involvement.

Discussion

This study analytically tested the proposition that minority stress results in the differential propensities of being discriminated against and violence involvement between vulnerable and nonvulnerable individuals. Our findings demonstrated that, after taking into account the full range of school- and individual-level predictors, vulnerability status was not associated with violence involvement. Nevertheless, we found a strong association between vulnerability and discrimination. Moreover, our analyses demonstrate that other factors, and primarily school climate, explain the association between vulnerability status and violence involvement. However, higher levels of representation of vulnerable groups (students with disabilities, the obese and LGB) in school were positively associated with higher odds of violence involvement for the obese and LGB students. This finding is in

line with earlier research showing that the composition of the student body creates an important context for violence involvement (Cook et al., 2010; Eisenberg et al., 2015; Gower et al., 2015). It also shows that presence of similar peers in a school does not foster positive interactions among students with obesity and LGB students but increases the chances of violence involvement for members of these vulnerable groups. However, these findings are open to other interpretations. For example, other school factors, rather than the presence of vulnerable peers in school, may have a role in explaining relatively higher violence involvement for the obese and LGB students.

This study is not without limitations. First, we conceptualized violence involvement as being a victim or a perpetrator of physical violence. However, there is a range of definitions of violence provided by the researchers in this area (Baldry et al., 2017; Espelage & Swearer, 2003; Hymel & Swearer, 2015). Second, our treatment of the discrimination variable as a dichotomous outcome might have weakened associations between discrimination and other variables. Third, we identified LGB respondents on the basis of information about sexual attraction (same-sex attraction) and behavior (same-sex intercourse). Because the Add Health study did not ask participants to identify their sexual orientation, we were unable to identify LGB individuals using the methodology of the Add Health. Fourth, we focused only on three vulnerable groups – the disabled, the obese, and LGB. In this investigation, we did not examine other vulnerable groups that are characterized by their predisposition to be victims of discrimination, such as those disadvantaged by virtue of poverty, race, ethnicity, different forms of abuse or similar. We also believe that further research is needed to examine the link between the concentration

of vulnerable students in schools and the district-level resources and other potential factors that influence the school environment.

Nevertheless, despite these limitations, our study has relevance for researchers and policy makers in K-12 education. Because our findings demonstrate that school climate is the single and the most important factor affecting violence involvement, we believe that interventions aimed at improving school climate should be the most effective strategy for violence prevention among the vulnerable groups of adolescents.

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Table 1. Description of Study Variables

Variable Name	Description
Outcome Measures	
Discrimination	How often the respondent felt that they were treated with less respect or courtesy than other people. Time frame: 12 months prior to the survey.
Victimization	A positive response to any of the following questions: Has someone threatened you with a gun or a knife? Has someone shot or stabbed you? Has someone slapped, hit, choked, or kicked you? Have you been hurt by someone badly enough to need bandages or care from doctor or nurse? Time frame: 12 months prior to the survey.
Perpetration	A positive response to any of the following questions: Have you pulled a knife or gun on someone? Have you shot or stabbed someone? Have you used a weapon in a fight? Have you hurt someone badly enough to need bandages or care from doctor or nurse? Time frame: 12 months prior to the survey.
Explanatory Measures	
Vulnerable Group Status	
Emotionally Disabled	Respondents who scored in the upper quintile of a 17-item emotional distress scale at Wave I. Time frame: 12 months prior to the survey.
Learning Disabled	Respondents who received special education and had difficulty with schoolwork daily/near daily at Wave I. Time frame: 12 months prior to the survey.
Physical Disabled	Respondents who reported of functional limitations and activity restrictions at Waves I and III Time frame: 12 months prior to the survey.
Obese	Respondents who had a BMI at or above the 95th percentile for their age and gender at Wave I. Time frame: at the time of the survey.
LGB	Respondents who reported same-sex romantic attractions and same-sex romantic relationships at Wave I. Time frame: at the time of the survey.
Control Variables	
Parents' Education	The highest level of educational attainment of either parent in years.
Parents' Income	Combined income of both parents/guardians in thousands of U.S. dollars.
Two-Parent Household	1=having been raised in two-parent families; 0=else.
Race-Ethnicity	A series of dummy variables distinguishing Asians, non-Hispanic blacks, non-Hispanic whites, and others.
Gender	1=male; 0=female.
Age (Wave 4)	Age in years.
School Climate	Average of the responses to the following questions: Do you feel close to people at school? Do you feel like being part of school? Students prejudiced at school? (reverse coded) Are you happy at school? Do teachers treat students fairly? Do you feel safe at school?
Shares of Students, Members of Vulnerable Groups	Percentages of students in school who were identified as members of vulnerable groups (the emotionally disabled, etc.)

Table 2. The Descriptive Statistic of the Sample (N= 12,929)

	Weighted Mean or Percentage	St. Deviation
Dependent Variables		
Discrimination	24.2%	
Victimization	12.3%	
Perpetration	10.4%	
Independent Variables		
Vulnerable Group Status		
Emotional Disability	19.1%	
Learning Disability	6.2%	
Physical Disability	6.0%	
Obesity	12.0%	
LGB	6.3%	
Control Variables		
Parents' Education	14.8	1.8
Parents' Income	4.9	0.7
Two-Parent Household	56.8%	
African-American	15.3%	
Asian	5.8%	
Latino	12.2%	
Non-Hispanic Whites	62.5%	
Other Race-Ethnicity	3.2%	
Age	14.7	1.7
Male	49%	
School-Level Variables		
School Climate	3.17	2.61
Share of Students with Emotional Disability	21.4%	
Share of Students with Learning Disability	6.3%	
Share of Students with Physical Disability	6.1%	
Percentage of Obese Students	6.4%	
Percentage of LGB Students	6.7%	

Note: A- reference groups in the subsequent multivariate analyses.

Table 3. Odds Ratios and Their Standard Errors (In Parenthesis); Emotionally Disabled vs. Otherwise

	Model 1 (Baseline)	Model 2 (Baseline + School Effects)	Model 3 (Full Model)
	Panel A: Outcome—Discrimination		
Vulnerable Group			
Emotionally Disabled	1.326***	1.056	1.043
	(0.167)	(0.175)	(0.181)
School-Level Variables			
School Climate		0.651***	0.815**
		(0.264)	(0.285)
Share of Students with Emotional Disability		1.338***	1.173*
		(0.246)	(0.252)
-Pseudo log-likelihood	1,475	1,269	876
Pseudo R^2	0.136	0.154	0.227
	Panel B: Outcome—Victimization		
Vulnerable Group			
Emotionally Disabled	1.345***	1.037	0.979
	(0.141)	(0.151)	(0.159)
School-Level Variables			
School Climate		0.679***	0.826**
		(0.287)	(0.306)
Share of Students with Emotional Disability		1.412***	1.140*
		(0.263)	(0.271)
-Pseudo log-likelihood	1,538	1,281	1,064
Pseudo R^2	0.131	0.150	0.225
	Panel C: Outcome—Perpetration		
Vulnerable Group			
Emotionally Disabled	1.236***	1.095	1.035
	(0.145)	(0.154)	(0.166)
School-Level Variables			
School Climate		0.692***	0.816***
		(0.289)	(0.327)
Share of Students with Emotional Disability		1.369***	1.191**
		(0.274)	(0.390)
-Pseudo log-likelihood	1,610	1,305	1,023
Pseudo R^2	0.122	0.196	0.229

Note: All estimates are weighted and adjust for design effects. In addition to school-level variables (school climate and the percentage of vulnerable students) added in Model 2, Model 3 includes parental educational attainment, parental income, being raised in a two-parent household, race-ethnicity dummies, age and sex. Coefficients for all variables are not reported in Model 3 but are available upon request.
*$p < 0.1$. **$p < 0.05$. ***$p < 0.01$.

Table 4. Odds Ratios and Their Standard Errors (In Parenthesis); Learning Disabled vs. Otherwise

	Model 1 (Baseline)	Model 2 (Baseline + School Effects)	Model 3 (Full Model)
	Panel A: Outcome—Discrimination		
Vulnerable Group			
Emotionally Disabled	1.589***	1.355**	1.142*
	(0.122)	(0.130)	(0.137)
School-Level Variables			
School Climate		0.638***	0.787**
		(0.295)	(0.307)
Share of Students with		1.433***	1.154*
Emotional Disability		(0.261)	(0.274)
-Pseudo log-likelihood	1,486	1,244	868
Pseudo R^2	0.133	0.151	0.222
	Panel B: Outcome—Victimization		
Vulnerable Group			
Emotionally Disabled	1.422***	1.056	0.922
	(0.126)	(0.134)	(0.141)
School-Level Variables			
School Climate		0.685***	0.813**
		(0.282)	(0.296)
Share of Students with		1.169*	1.089
Emotional Disability		(0.243)	(0.250)
-Pseudo log-likelihood	1,450	1,219	1,043
Pseudo R^2	0.138	0.149	0.219
	Panel C: Outcome—Perpetration		
Vulnerable Group			
Emotionally Disabled	1.338***	1.095	1.066
	(0.125)	(0.137)	(0.142)
School-Level Variables			
School Climate		0.691***	0.840**
		(0.292)	(0.310)
Share of Students with		1.283**	1.151*
Emotional Disability		(0.306)	(0.317)
-Pseudo log-likelihood	1,611	1,305	1,024
Pseudo R^2	0.126	0.192	0.226

Note: All estimates are weighted and adjust for design effects. In addition to school-level variables (school climate and the percentage of vulnerable students) added in Model 2, Model 3 includes parental educational attainment, parental income, being raised in a two-parent household, race-ethnicity dummies, age and sex. Coefficients for all variables are not reported in Model 3 but are available upon request.
*$p < 0.1$. **$p < 0.05$. ***$p < 0.01$.

Table 5. Odds Ratios and Their Standard Errors (In Parenthesis); Physically Disabled vs. Otherwise

	Model 1 (Baseline)	Model 2 (Baseline + School Effects)	Model 3 (Full Model)
	Panel A: Outcome—Discrimination		
Vulnerable Group			
Emotionally Disabled	1.443***	1.229*	1.086
	(0.157)	(0.165)	(0.173)
School-Level Variables			
School Climate		0.657***	0.811**
		(0.289)	(0.301)
Share of Students with		1.176**	1.069
Emotional Disability		(0.266)	(0.272)
-Pseudo log-likelihood	1,531	1,281	914
Pseudo R^2	0.129	0.148	0.218
	Panel B: Outcome—Victimization		
Vulnerable Group			
Emotionally Disabled	1.544***	1.088	1.050
	(0.141)	(0.149)	(0.156)
School-Level Variables			
School Climate		0.706***	0.855*
		(0.276)	(0.290)
Share of Students with		1.194*	1.022
Emotional Disability		(0.248)	(0.254)
-Pseudo log-likelihood	1,494	1,256	1,074
Pseudo R^2	0.135	0.146	0.215
	Panel C: Outcome—Perpetration		
Vulnerable Group			
Emotionally Disabled	0.829*	1.062	1.014
	(0.160)	(0.172)	(0.181)
School-Level Variables			
School Climate		0.670***	0.818**
		(0.286)	(0.298)
Share of Students with		1.321***	1.096
Emotional Disability		(0.297)	(0.311)
-Pseudo log-likelihood	1,859	1,424	1,055
Pseudo R^2	0.086	0.139	0.211

Note: All estimates are weighted and adjust for design effects. In addition to school-level variables (school climate and the percentage of vulnerable students) added in Model 2, Model 3 includes parental educational attainment, parental income, being raised in a two-parent household, race-ethnicity dummies, age and sex. Coefficients for all variables are not reported in Model 3 but are available upon request.
*p < 0.1. **p < 0.05. ***p < 0.01.

Table 6. Odds Ratios and Their Standard Errors (In Parenthesis); The Obese vs. Otherwise

	Model 1 (Baseline)	Model 2 (Baseline + School Effects)	Model 3 (Full Model)
	Panel A: Outcome— Discrimination		
Vulnerable Group			
Emotionally Disabled	1.526***	1.337**	1.150*
	(0.132)	(0.140)	(0.149)
School-Level Variables			
School Climate		0.594***	0.795**
		(0.306)	(0.311)
Share of Students with		1.476**	1.189
Emotional Disability		(0.273)	(0.276)
-Pseudo log-likelihood	1,580	1,272	894
Pseudo R^2	0.132	0.154	0.223
	Panel B: Outcome—Victimization		
Vulnerable Group			
Emotionally Disabled	1.476***	1.068	1.008
	(0.137)	(0.143)	(0.151)
School-Level Variables			
School Climate		0.699***	0.831**
		(0.278)	(0.288)
Share of Students with		1.454***	1.174*
Emotional Disability		(0.255)	(0.263)
-Pseudo log-likelihood	1,484	1,259	995
Pseudo R^2	0.134	0.152	0.220
	Panel C: Outcome—Perpetration		
Vulnerable Group			
Emotionally Disabled	1.329***	1.062	1.077
	(0.160)	(0.172)	(0.183)
School-Level Variables			
School Climate		0.682***	0.865*
		(0.289)	(0.301)
Share of Students with		1.321***	1.186*
Emotional Disability		(0.297)	(0.307)
-Pseudo log-likelihood	1,657	1,308	1,035
Pseudo R^2	0.126	0.159	0.219

Note: All estimates are weighted and adjust for design effects. In addition to school-level variables (school climate and the percentage of vulnerable students) added in Model 2, Model 3 includes parental educational attainment, parental income, being raised in a two-parent household, race-ethnicity dummies, age and sex. Coefficients for all variables are not reported in Model 3 but are available upon request.
*p < 0.1. **p < 0.05. ***p < 0.01.

Table 7. Odds Ratios and Their Standard Errors (In Parenthesis); LGB vs. Otherwise

	Model 1 (Baseline)	Model 2 (Baseline + School Effects)	Model 3 (Full Model)
	Panel A: Outcome— Discrimination		
Vulnerable Group			
Emotionally Disabled	1.535***	1.296**	1.183**
	(0.127)	(0.141)	(0.157)
School-Level Variables			
School Climate		0.657***	0.811**
		(0.306)	(0.317)
Share of Students with		1.476***	1.189**
Emotional Disability		(0.273)	(0.286)
-Pseudo log-likelihood	1,480	1,181	849
Pseudo R^2	0.139	0.161	0.226
	Panel B: Outcome—Victimization		
Vulnerable Group			
Emotionally Disabled	1.370***	1.128*	0.950
	(0.132)	(0.137)	(0.151)
School-Level Variables			
School Climate		0.706***	0.837*
		(0.294)	(0.306)
Share of Students with		1.304**	1.122*
Emotional Disability		(0.263)	(0.270)
-Pseudo log-likelihood	1,493	1,257	974
Pseudo R^2	0.134	0.146	0.222
	Panel C: Outcome—Perpetration		
Vulnerable Group			
Emotionally Disabled	1.264**	1.089	1.048
	(0.165)	(0.179)	(0.193)
School-Level Variables			
School Climate		0.712***	0.840**
		(0.283)	(0.310)
Share of Students with		1.321**	1.151*
Emotional Disability		(0.297)	(0.317)
-Pseudo log-likelihood	1,569	1,284	1,024
Pseudo R^2	0.128	0.156	0.226

Note: All estimates are weighted and adjust for design effects. In addition to school-level variables (school climate and the percentage of vulnerable students) added in Model 2, Model 3 includes parental educational attainment, parental income, being raised in a two-parent household, race-ethnicity dummies, age and sex. Coefficients for all variables are not reported in Model 3 but are available upon request.
*p < 0.1. **p < 0.05. ***p < 0.01.